

## **Chapter 13. Cumulative Impacts**

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## Overview to Cumulative Impacts Analysis

State CEQA Guidelines Section 15130 requires that an EIR discuss cumulative impacts of a proposed project when the incremental effect of the project is cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of current projects, and the effects of probable future projects. The discussion of cumulative impacts must reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone.

## Approach

The cumulative impact analysis must identify related projects through either a “list” or a “projection” approach, summarize effects of the related projects, and contain a reasonable analysis of cumulative impacts and mitigation measures. The list approach includes requires compiling a list of past, present, or probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.

This cumulative impacts analysis is based on a list approach of similar types of projects that could contribute to cumulative impacts with the implementation of the GO for each resource topic. State CEQA Guidelines state that the lead agency should consider the nature of each environmental resource being examined and the location and type of the project to determine whether to include it as a related project when utilizing the list approach for a cumulative impacts analysis (State CEQA Guidelines Section 15130(b)(1)(B)(1)).

## Impacts

Implementation of the GO could result in cumulatively considerable impacts for groundwater, ~~fisheries~~, biological resources, air quality, and transportation. These cumulative impacts are discussed below.

### Groundwater Quality

#### Impact: Cumulative Nitrate Contamination of Groundwater

As described in Chapter 3, “Soils, Hydrology, and Water Quality”, land application of biosolids under the GO would result in less-than-significant impacts to surface water and groundwater hydrology because it is unlikely to cause changes in surface or groundwater use, and the GO requires surface runoff to be controlled at sites where biosolids have been applied. The potential impact to water quality from surface water runoff of contaminants is also less than significant because the GO requires a number of measures to minimize the risk of runoff, such as prohibiting direct discharge of biosolids to water, establishing minimum setback distances to streams, and prohibiting application under conditions that could result in surface runoff of biosolids. The potential impacts to surface and groundwater quality from leaching of trace elements and synthetic organic compounds are also less than significant because the regulatory performance standards established under the GO, operational requirements for a discharger applying biosolids under the GO, or naturally occurring conditions in California would result in low probabilities for water quality impairment to occur.

Widespread land application of biosolids resulting from many individual permits, in combination with certain environmental conditions, has the potential to contribute to groundwater impairment from nitrates. The impact has the greatest potential to occur in nitrate-sensitive areas, which include the many areas of California where nitrate concentrations are approaching or already exceeding drinking water standards, where beneficial uses have been impaired by nitrate contamination, or where naturally high levels of nitrate exist but may not be identified due to lack of monitoring or use for domestic supplies. Even if biosolids are applied at agronomic rates, groundwater could be significantly impaired by nitrates if the following conditions exist:

- g other nitrogen inputs from unregulated applications of fertilizers occur, resulting in total applied nitrogen levels in excess of the assimilative capacity of the soil-cropping system;

- g** either timing of biosolids application, rate of mineralized nitrogen losses, or irrigation/rainfall water exceeds the soil water-holding capacity and results in nitrates leaching into groundwater;
- g** other sources of nitrogen are added to the groundwater in areas adjacent to the proposed biosolids applications areas, including dairy and feedlot operations, sewage treatment operations, industrial waste discharges, and on-site septic system leachate;
- g** long-term overdraft of shallow, unconfined aquifers reduces the existing groundwater assimilative capacity for nitrate contributions;
- g** biosolids are applied at the agronomic rate and monitoring is not conducted to ensure compliance in areas where depth to groundwater is greater than 25 feet; and
- g** biosolids are applied at the agronomic rate, but site-specific hydrogeology, groundwater assimilative capacity, or municipal and domestic well vulnerability are not considered.

In California, typical areas where cumulative impacts could occur include existing nitrate-impaired groundwater basins such as the Salinas Valley, Orange County, Upper Santa Ana River watershed, southern San Joaquin Valley, and the sandy soil areas of the central coast and southern California.

This cumulative impact is considered potentially significant because many of the environmental factors and actions described above are either unregulated or administered and regulated by more than one resource management agency. Implementation of the following mitigation measures would reduce the cumulative impact to a less-than-significant level.

**Mitigation Measure 13-1. Minimize Contribution to Groundwater Nitrate Contamination from Land Application of Biosolids Conducted under the GO.** As a condition for the review of each individual NOI submitted for a proposed biosolids application project under the GO, the RWQCB engineer responsible for issuing the NOA would:

- g** evaluate whether the proposed discharge would occur within an area designated as having existing nitrate contamination problems and
- g** evaluate whether the proposed discharge would pose an imminent threat of contributing to or causing exceedances of water quality standards for nitrate.

If the responsible engineer finds that either condition exists, the RWQCB would minimize the potential water quality impacts of the project by requiring the applicant to modify the proposed discharge activities or provide additional information to verify that the proposed discharge would not cause or contribute to violations of water quality standards.

Verification that the proposed project would not cause or contribute to water quality degradation would require that sufficient information be submitted by a qualified civil engineer, agricultural engineer, or other professional hydrogeologist or water quality specialist such that the RWQCB engineer could make a finding that the proposed discharge would be in compliance with provisions of the GO. If the RWQCB finds that modifications to the proposed discharge are necessary for compliance with provisions of the GO, such modifications would consider, but would not be limited to, the following:

- g requirements for the discharger to use the services of a certified agronomist, crop advisor, or agricultural engineer to develop additional management practices related to: 1) determining the agronomic rate for biosolids application projects that includes all sources of nitrogen applied to the application site; 2) developing overall farm water, cropping, and fertility management practices; and 3) evaluating the potential for nitrate leaching or impairment of offsite groundwater use;
- g requirements of the discharger to provide additional groundwater monitoring in areas where groundwater is found at depths greater than 25 feet or there exist other identified local hydrogeologic conditions that could make the groundwater susceptible to contamination;
- g requirements of the discharger to identify whether the proposed biosolids application site is within an area where Drinking Water Source Water Assessment and Protection (DWSWAP) Program setback requirements are implemented for municipal and domestic wells; and
- g requirements of the discharger to consider the unique local site and hydrogeologic conditions in the design of the project and/or other groundwater quality management or regulatory programs that are currently active in the area.

#### **Mitigation Measure 13-2: Reduce Sources of Nitrate**

**Contamination.** The SWRCB would continue to identify causes of cumulative nitrate loading in nitrate sensitive groundwater areas and develop an effective strategy for reducing those sources. An effective strategy may include, but would not be limited to, the following:

- g Each RWQCB should continue to implement existing groundwater pollution protection permit programs and policies to prevent or reduce nitrate

contamination of groundwater. Such a program may include evaluating increased enforcement procedure, or modifying the permitting programs for other agricultural activities (e.g., confined animal feeding operations, dairies, poultry farms), industrial and municipal NPDES-permitted discharges of wastes and reclaimed water to land, and NPDES storm water management regulations.

- g Other local, state, and federal permitting authorities should evaluate, integrate, increase enforcement of, or modify their existing policies and procedures to reduce the cumulative contribution of nitrates to groundwater. Examples of other regulatory programs that should be evaluated and considered in areas that would have biosolids application include groundwater management programs, residential onsite septic tank system approval, municipal landfill management plans, agricultural cooperative extension programs, and forestry management programs.

#### Fish

##### ~~Impact: Cumulative Reduction in Fisheries Productivity~~

~~As described above under Groundwater, the proposed project would not result in direct significant impacts to surface and groundwater resources. However, implementation of the GO in combination with certain environmental conditions and other projects that contribute to nitrate contamination (such as on-going agricultural crop fertilization, feed lots, dairies, and septic systems) has the potential to contribute to groundwater impairment from nitrates, and, under certain environmental conditions, could impair surface water quality. Increases in nitrates in surface water could cause eutrophication and therefore reduced fisheries productivity. However, Mitigation Measure 13-1, described above, would reduce this cumulative impact to a less-than-significant level.~~

## Biological Resources

### **Impact: Cumulative Loss of Special-Status Plant and Wildlife Species or the Loss or Disturbance of Biologically Unique or Sensitive Natural Communities**

Land application of biosolids would generally occur on lands that have previously been disturbed, such as existing agricultural operations. Some land application of biosolids could occur on lands that are not currently disturbed, such as the conversion of range land to more land intensive agricultural operations. In these cases, land application could result in the loss of special-status plant and wildlife species or the loss or disturbance of biologically unique or sensitive natural communities. Other past, present, or reasonably foreseeable future projects that involve the conversion of land from open space to other

uses also could result in the loss of special-status plant or wildlife species or the disturbance or loss of biologically unique or sensitive natural communities. Refer to Chapter 7, “Biological Resources”, for a discussion of impacts and recommended mitigation measures to reduce the effects of the proposed project to a less-than-significant level. If these mitigation measures are implemented, the project’s effect on biological resources would be reduced to a minimum and the proposed project would not contribute to a significant cumulative impact.

## Air Quality

### Impact: Cumulative Increase in NO<sub>x</sub> and PM<sub>10</sub> Emissions

The proposed project could result in an increase in NO<sub>x</sub> and PM<sub>10</sub> emissions resulting from transport of biosolids from POTWs to land-application sites and from the use of farm equipment to spread and incorporate biosolids into the soil during land application operations. Land application of biosolids is expected to increase over the next 15 years as the population increases. Increases in air quality emissions resulting from the project would be greatest in Kern, Kings, Merced, San Diego, Riverside, and Solano Counties, where the greatest amount of land application occurs. Other land development projects, industrial projects, and the increase in air quality emissions resulting from activities associated with population growth would also contribute to an increase in air quality emissions. Air districts in non-attainment regions will be required to implement agriculture control measures to regulate NO<sub>x</sub> and PM<sub>10</sub> under SB 700 (Chapter 479, Statutes of 2003), however, the contents of these requirements are not yet known (California Legislation 2003). Air quality management plans (AQMPs) include policies to reduce air emissions from industrial operations, auto and truck exhaust, increases in population, and other activities that could result in increased air emissions. This cumulative impact is considered less than significant because AQMPs include policies aimed at reducing vehicle emissions (such as those that would be generated by implementation of the GO) and direct air quality impacts would be reduced to a less-than-significant level with implementation of Mitigation Measures 10-1 and 10-2.

## Transportation

### Impact: Cumulative Deterioration of Roadways

Implementation of the GO would result in an increase in trips on roadways, some of which are currently deteriorated, for the delivery of biosolids to land application sites. As described in Chapter 9, “Traffic”, this direct impact is considered less than significant. However, this cumulative impact is considered less than significant because the number of vehicles that use these roads for the delivery of biosolids is a small percentage of the overall volume of vehicles using these roads. Additionally, some counties have roadway management plans that include policies to repair deteriorated roadways and roadway impact fees to pay for roadway repairs.